

the vapor collection system is maintained below 30 percent by volume of the lower flammable limit;

(2) Activate an alarm when the hydrocarbon concentration in the vapor collection line exceeds 30 percent by volume of the lower flammable limit; and

(3) Close the remotely operated cargo vapor shutoff valve required by § 154.810(a) of this subpart when the hydrocarbon concentration in the vapor collection line exceeds 50 percent by volume of the lower flammable limit.

[CGD 88-102, 55 FR 25429, June 21, 1990; 55 FR 39270, Sept. 26, 1990]

**§ 154.826 Vapor compressors and blowers.**

(a) Each inlet and outlet to a compressor or blower which handles vapor that has not been inerted, enriched, or diluted in accordance with § 154.824 of this subpart must be fitted with:

(1) A detonation arrester;

(2) A flame arrester; or

(3) An explosion suppression system acceptable to the Commandant (G-MSO).

(b) If a reciprocating or screw-type compressor handles vapor in the vapor collection system, it must be provided with indicators and audible and visible alarms to warn against the following conditions:

(1) Excessive discharge gas temperature at each compressor chamber or cylinder;

(2) Excessive cooling water temperature;

(3) Excessive vibration;

(4) Low lube oil level;

(5) Low lube oil pressure; and

(6) Excessive shaft bearing temperatures.

(c) If a liquid ring-type compressor handles vapor in the vapor collection system, it must be provided with indicators and audible and visible alarms to warn against the following conditions:

(1) Low level of liquid sealing medium;

(2) Lack of flow of liquid sealing medium;

(3) Excessive temperature of the liquid sealing medium;

(4) Low lube oil level;

(5) Low lube oil pressure, if pressurized lubricating system; and

(6) Excessive shaft bearing temperature.

(d) If a centrifugal compressor, fan, or lobe blower handles vapor in the vapor collection system, construction of the blades and/or housing must meet one of the following:

(1) Blades or housing of nonmetallic construction;

(2) Blades and housing of nonferrous material;

(3) Blades and housing of corrosion resistant steel;

(4) Ferrous blades and housing with one-half inch or more design tip clearance; or

(5) Blades of aluminum or magnesium alloy and a ferrous housing with a nonferrous insert sleeve at the periphery of the impeller.

[CGD 88-102, 55 FR 25429, June 21, 1990, as amended by CGD 96-026, 61 FR 33666, June 28, 1996]

**§ 154.828 Vapor recovery and vapor destruction units.**

(a) The inlet to a vapor recovery unit which receives cargo vapor that has not been inerted, enriched, or diluted in accordance with § 154.824 of this subpart must be fitted with one of the following:

(1) A detonation arrester;

(2) A flame arrester; or

(3) An explosion suppression system acceptable to the Commandant (G-MSO).

(b) The inlet to a vapor destruction unit must:

(1) Have a liquid seal; and

(2) Have two quick-closing stop valves installed in the vapor line.

(c) A vapor destruction unit must:

(1) Not be within 30 meters (98.4 ft.) of any tank vessel berth or mooring at the facility;

(2) Have a flame arrester or detonation arrester fitted in the vapor line; and

(3) Alarm and shut down when a flame is detected on the flame arrester or detonation arrester.

(d) When a vapor destruction unit shuts down or has a flame-out condition the vapor destruction unit control system must: